

top of the foundation and along the seafloor. The foundation shall not lose contact with the soil due to uplift created by the maximum overturning moment.

(iv) The capacity of the foundation to resist a deep-seated bearing failure shall be analyzed.

(v) Where present, the additional effects of penetrating walls or skirts that transfer vertical and lateral loads to the soil shall be investigated for their contribution to bearing load capacity and lateral resistance.

(3) *Soil reaction on the platform.* (i) For conditions during and after installation, the reaction of the soil against all structural members seated on or penetrating into the seafloor shall be determined and accounted for in the design of these members.

(ii) The distribution of soil reactions shall be based on the results obtained in paragraphs (b)(2) and (b)(4) of this section, and the calculations of soil reactions shall account for any deviation from a plane surface, the load-deflection characteristics of the soil, and the geometry of the platform base.

(iii) Where applicable, effects of local soil stiffening, nonhomogeneous soil properties, and boulders and other obstructions shall be addressed in the design. During installation, the possibility of local contact pressures due to irregular contact between the base and the seafloor shall be considered. Contact pressures shall be added to the hydrostatic pressure.

(iv) The penetration resistance of structural elements projecting into the seafloor below the foundation structure shall be analyzed. The design of the ballasting system shall reflect uncertainties associated with achieving the required penetration of the platform.

§ 250.910 Marine operations.

(a) *General*—(1) Marine operations means all activities necessary for the transportation and installation of a platform from the time it enters the marine environment until it is fixed in place at its final destination. Marine operations generally include such activities as follows:

- (i) Lifting and mooring,
- (ii) Loadout or initial flotation,
- (iii) Fabrication afloat,

- (iv) Towing,
- (v) Launching and uprighting,
- (vi) Submergence,
- (vii) Pile installation, and
- (viii) Final field erection.

(2) The requirements of this section apply to all platforms covered by this subpart, regardless of structural type or material of construction.

(b) *Objective.* The structural strength and integrity of a platform shall not be reduced or otherwise jeopardized by the performance of the activities required to install the platform on site. The type and magnitude of loads and load combinations to which a platform will be exposed during marine operations shall be the subject of an analysis pursuant to paragraph (c) of this section, except where the use of proven and well-controlled methods of fabrication and installation are proposed and justified. Sufficient equipment shall be provided to ensure installation of the platform in a safe and well-controlled manner.

(c) *Analysis.* (1) Analyses shall be performed to determine the type and magnitude of the loads and load combinations to which the platform will be exposed during the performance of marine operations.

(2) Analyses shall be performed to ensure that the structural design is sufficient to withstand the type and magnitude of the loads and load combinations determined, in accordance with paragraph (c)(1) of this section, without loss or degradation of structural integrity.

(3) Analyses shall be performed to ensure that the platform or its means of support has sufficient hydrostatic stability and reserve buoyancy to allow for successful execution of all phases of marine operations.

§ 250.911 Inspection during construction.

(a) *General*—(1) *Coverage.* All pile-supported and gravity platforms covered by this subpart shall be inspected during the construction phase. Additional requirements for steel pile-supported platforms are contained in paragraph (b) of this section, and additional requirements pertaining to concrete-gravity platforms are contained in paragraph (c) of this section. The

phases of construction subject to inspection include material manufacture, fabrication, loadout, transportation, positioning, installation, and final field erection.

(2) *Objective.* Inspections during construction are to verify that the platform is constructed in accordance with the approved construction plan. Any unusual or innovative application of materials or methods of construction not adequately covered by the requirements of this section shall receive special attention during compliance inspections relevant to its effect on the integrity of the platform.

(3) *Remedial action.* If construction inspection results reveal that materials, procedures, or workmanship deviate significantly from the approved design, remedial action shall be taken.

(4) *Identification of materials.* The origin of materials used in the platform and the results of relevant material tests for all significant structural materials shall be retained and made readily available for inspection by MMS representatives during all stages of construction. Records shall be kept of the locations throughout the platform of the various heat numbers for such materials.

(b) *Steel pile-supported platforms—(1) Scope.* Inspections of steel pile-supported platforms shall address the following topics, as appropriate:

- (i) Material quality and forming,
- (ii) Welder and welding procedure qualifications,
- (iii) Weld inspection,
- (iv) Tolerances and alignments, and
- (v) Corrosion-control systems.

(2) *Material quality and forming.* Inspection shall verify that all materials employed are of good quality and suitable for their intended service as specified in the approved design. Inspection shall ensure the compliance of materials to the relevant material standards selected in the design of the platform. Inspection shall ensure that formed members satisfy the dimensional tolerances listed in the design.

(3) *Welder and welding-procedure qualifications.* (i) Welders shall be tested and possess a current welder's certification.

(ii) All welding procedures to be employed shall be tested and certified for the production of satisfactory welds.

Welding procedures previously tested and certified shall be considered prequalified.

(4) *Weld inspection.* (i) Inspection shall include, but not be limited to, visual inspection of all welds and representative magnetic particle or dye penetrant inspection of welds of Weld Classes A and B materials (see § 250.907(a)(4) of this part) not subjected to ultrasonic or radiographic inspection. The extent of ultrasonic or radiographic inspection shall be specified and shall emphasize, but not be confined to, welds of Weld Class A materials.

(ii) The extent and methods of inspection shall be consistent with the classification of applications (see § 250.137(a)(4) of this part) of the area being examined.

(iii) Any welding not meeting the acceptance criteria specified in the inspection plan shall be rejected and appropriate remedial action taken.

(5) *Tolerances and alignments.* Overall dimensional tolerances, forming tolerances, and local alignment tolerances shall be commensurate with those considered in developing the structural design. Inspections shall ensure that the dimensional tolerance criteria are being met. Out of roundness of structural elements for which buckling is the anticipated mode of failure shall receive individual inspection.

(6) *Corrosion-control systems.* Corrosion-control systems employed on the platform shall be inspected to ensure that they are installed as specified in the approved design. Inspection shall ensure that proper protection against galvanic effects, especially in locations where nonferrous materials are used in conjunction with steel, has been provided in the corrosion-control system.

(7) *Additional inspection items.* (i) The provisions of paragraphs (b)(2) through (b)(6) of this section relate only to matters directly affecting the onshore construction phases of the platform. Other items relating to the onshore construction site and the construction phases from loadout to final erection shall also be performed.

(ii) The construction site shall be inspected to ensure that adequate consideration has been given to the following items:

(A) Support of the platform during construction,

(B) Employment of a sufficient number of certified welders and inspectors to maintain an adequate quality of work, and

(C) Weathertight storage of welding consumables under conditions specified by their manufacturers.

(iii) Inspection shall verify that the following operations have been accomplished in a manner conforming to approved plans or drawings:

(A) Loadout,

(B) Tie down,

(C) Positioning at the site,

(D) Installation (see § 250.909(d)(1)(iv) of this part for piles), and

(E) Final field erection.

(iv) To determine if overstressing of the platform during transportation has occurred, towing records shall be reviewed to ascertain if conditions during towing operations exceeded those employed in the analyses required by § 250.910(c) of this part.

(v) When the inspections indicate that overstressing has occurred during loadout, transportation, or installation, the affected parts of the platform shall be surveyed to determine the extent of actual damage, if any. Where necessary, a reevaluation of the structural capacity shall be carried out, considering the results of the survey.

(8) *Records.* The following construction records shall be compiled, retained, and made available for inspection by MMS representatives:

(i) Mill certificates,

(ii) Weld-procedure qualification records,

(iii) Weld inspection records,

(iv) Dimensional tolerance reports,

(v) Towing records, and

(vi) Pile driving records.

(c) *Concrete-gravity platforms—(1) Scope.* Inspection of concrete-gravity platforms shall address the following topics, as appropriate:

(i) Preparation for concrete production and placement;

(ii) Batching, mixing, and placing concrete;

(iii) Form removal and concrete curing;

(iv) Pretensioning and grouting;

(v) Joints; and

(vi) Finished concrete.

(2) *Preparation for concrete production and placement.* (i) Inspection shall ensure that the pertinent physical properties of cement, reinforcing steel, prestressing tendons, and appurtenances comply with those specified in the approved design.

(ii) Forms and shoring supporting the forms shall be inspected to ensure that they are adequate in number and type and are located correctly.

(iii) The dimensional tolerances of the forms shall be inspected to ensure that the finished dimensional tolerances are comparable to those allowed for in the approved design.

(iv) Reinforcing steel, prestressing tendons, post-tensioning ducts, anchorages, and any other embedded steel shall be inspected, as appropriate, for size, bending, spacing, location, firmness of installation, surface condition, vent locations, proper duct coupling, and duct capping.

(3) *Batching, mixing, and placing concrete.* (i) Inspections shall be performed to ensure that the procedures for the production and placement of concrete provide a well-mixed and well-compacted concrete. The procedures shall also limit segregation, loss of material, contamination, and premature initial set during all operations.

(ii) Inspection shall verify that the mix components of each batch of concrete are properly proportioned and within allowable variations specified in the approved design. Inspection shall ensure that the water/cement ratio of each batch is within the limit specified in § 250.908(b)(7) of this part.

(iii) Aggregate gradation, cleanliness, moisture content, and unit weight shall be tested. The frequency of testing shall be determined taking into account the uniformity of the supply source, volume of concrete used, and variations of atmospheric conditions.

(iv) Mix water shall be tested for purity following specified methods and schedules.

(v) Testing during the production of concrete shall be performed to monitor, as a minimum, the following concrete qualities:

(A) Consistency,

(B) Air content, and

(C) Strength.

(4) *Form removal and concrete curing.*

(i) Inspection shall ensure that forms and form supports are not removed until the platform has attained sufficient strength to bear its own weight, construction loads, and anticipated environmental loads without undue deformation and that they are removed according to schedule.

(ii) Inspection shall ensure that curing of concrete is accomplished in accordance with the provisions of a predetermined procedure.

(iii) Where the construction procedures require the submergence of recently placed concrete, inspection shall ensure that methods for protecting the concrete from the effects of salt water are properly executed.

(5) *Pretensioning and grouting.* (i) Inspection shall verify that the sequence of tendon tensioning and the resulting elongation and force are in accordance with provisions specified in the approved design.

(ii) Pretensioning or post-tensioning stress shall be determined by measuring both tendon elongation and tendon force. Inspection shall verify that the variation of measurements does not exceed a specified amount.

(iii) Inspection shall verify that grout mix proportions and ambient conditions during mixing are in accordance with provisions designated in the approved design. Tests for grout, viscosity expansion, bleeding, compressive strength, and setting time shall be performed to ensure compliance with design requirements. Procedures shall be observed to ensure that ducts are completely filled.

(iv) Anchorages shall be inspected to ensure that they are located and sized as specified in the design and are provided with adequate cover to mitigate the effects of corrosion.

(6) *Joints.* Where appropriate, leak testing of construction joints shall be performed by using specified procedures. When deciding which joints to inspect, consideration shall be given to the hydrostatic head on the subject joint during normal operation, the consequence of a leak at the subject joint, and the ease of repair once the platform is in service.

(7) *Finished concrete.* (i) The surface of the hardened concrete shall be com-

pletely inspected for cracks, honeycombing, popouts, spalling, and other surface imperfections.

(ii) The platform shall be examined by using a calibrated rebound hammer or a similar nondestructive examination device. Inspection shall verify that the results of surface inspection, cylinder strength test, or nondestructive examination are in accordance with the approved design criteria.

(iii) The completed sections of the platform shall be checked for compliance to specified design tolerances of thickness and alignment and, to the extent practicable, the location of reinforcing and prestressing steel and post-tensioning ducts.

(8) *Additional inspection items.* (i) While the provisions of paragraphs (c)(2) through (c)(7) of this section relate only to some matters directly affecting the onshore or nearshore construction phases of the platform, other items relating to such phases and from loadout to final erection shall also be considered.

(ii) Inspection shall ensure that adequate consideration has been given the following items:

(A) Support of the structure during construction,

(B) Employment of a sufficient number of competent workmen and inspectors to maintain an adequate quality of work,

(C) Storage of cement and prestressing tendons in weathertight areas,

(D) Storage of admixtures and epoxies according to manufacturers' specifications, and

(E) Storage of aggregates to limit segregation, contamination by deleterious substances, and moisture variations within the stockpile.

(iii) Inspection shall verify that the following operations, as applicable to the planned platform, have been accomplished in a manner conforming to approved plans or drawings developed for these operations:

(A) Loadout,

(B) Towing arrangements,

(C) Positioning at the site,

(D) Installation, and

(E) Final field erection.

(iv) To determine if overstressing of the platform during transportation has

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occurred, towing records shall be reviewed to ascertain if conditions during the towing operations exceeded those employed in the analyses required by § 250.910(c) of this part.

(9) *Records.* The following construction records shall be compiled, retained, and made available for inspection by MMS representatives:

(i) Material certificates and test reports;

(ii) Tensioning and grouting records;

(iii) Concreting records including weight, moisture content, mix proportions, test methods and results, ambient conditions during the pour, and test equipment calibration data;

(iv) Deviations from design or fabrication specifications and repairs carried out;

(v) Towing records; and

(vi) Data on initial structural settlements.

[53 FR 10690, Apr. 1, 1988; 53 FR 26067, July 11, 1988. Redesignated and amended at 63 FR 29479, 29486, May 29, 1998]

§ 250.912 Periodic inspection and maintenance.

(a) All platforms installed in the OCS shall be inspected periodically in accordance with the provisions of API RP 2A, section 14, Surveys. However, use of an inspection interval which exceeds 5 years shall require prior approval by the Regional Supervisor. Proper maintenance shall be performed to assure the structural integrity of the platform as a workbase for oil and gas operations.

(b) A report shall be submitted annually on November 1 to the Regional Supervisor stating which platforms have been inspected in the preceding 12 months, the extent and area of inspection, and the type of inspection employed, i.e., visual, magnetic particle, ultrasonic testing. A summary of the testing results shall be submitted indicating what repairs, if any, were needed and the overall structural condition of the platform.

[53 FR 10690, Apr. 1, 1988, as amended at 55 FR 51415, Dec. 14, 1990. Redesignated at 63 FR 29479, May 29, 1998]

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§ 250.913 Platform removal and location clearance.

(a) The lessee shall remove all structures in a manner approved by the Regional Supervisor to assure that the location has been cleared of all obstructions to other activities in the area.

(b) All platforms (including casing, wellhead equipment, templates, and piling) shall be removed by the lessee to a depth of at least 15 feet below the ocean floor or to a depth approved by the Regional Supervisor based upon the type of structure or ocean-bottom conditions.

(c) The lessee shall verify by appropriate means that the location has been cleared of all obstructions. The results of the location clearance survey shall be submitted to the Regional Supervisor by means of a letter from the company performing the work certifying that the area was cleared of all obstructions, the date the work was performed, the extent of the area surveyed, and the survey method used.

§ 250.914 Records.

The lessee shall compile, retain, and make available to Minerals Management Service representatives for the functional life of all platforms, the as-built structural drawings, the design assumptions and analyses, a summary of the nondestructive examination records, and the inspection results from platform inspections required by § 250.912 of this part.

[53 FR 10690, Apr. 1, 1988. Redesignated and amended at 63 FR 29479, 29486, May 29, 1998]

Subpart J—Pipelines and Pipeline Rights-of-Way

§ 250.1000 General requirements.

(a) Pipelines and associated valves, flanges, and fittings shall be designed, installed, operated, maintained, and abandoned to provide safe and pollution-free transportation of fluids in a manner which does not unduly interfere with other uses in the Outer Continental Shelf (OCS).

(b) An application shall be submitted to the Regional Supervisor and approval obtained prior to the installation, modification, or abandonment of a pipeline which qualifies as a lease